Illawarra Shoalhaven Local Health District

Emergency Medicine Fellowship Program

Topic-Based Quiz: Qs and As

Surgery 2

Candidate Instructions

- Duration = 30min
- Props are included within the examination booklets
- Allocated marks for each question are shown
- Each mark is of equal weight
- There is no negative marking
- Write answers CLEARLY, and cross out any errors
- Answer within space provided
- Do not begin until instructed
- You may take examination book home with you

Good Luck!

Acknowledgement: Thank you to the trainees who have written these SAQs with the hope of making their colleagues sweat, but ultimately gain more exposure to exam practice. Good job.

Topic-Based SAQ Quiz: Surgery 2

Question 1

A 32 year old man presents to the emergency department with painful defecation and a tender swelling adjacent to his anus. You diagnose a superficial perianal abscess.

List the 3 other anatomical types of perianal abscess (3 marks)

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You elect to perform an incision and drainage on his superficial perianal abscess. He is adequately sedated by a senior colleague in your resuscitation room. Outline your approach (4 marks)

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You successfully drain his perianal abscess. List 3 aspects of your post-procedure care of this man (3 marks)

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Question 2

A 63 year old man with a past history of prostate cancer comes to the emergency department with a prolonged painful erection. He is discreetly moved to a private cubical to await your review.

Define priapism (1 mark)

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What are the types of priapism? Give causes of each in the below table (4 marks)

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What is the main complication of priapism? In which type does it occur?

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You decide to perform a penile block, outline the technique for this procedure (3 marks)

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After a successful penile block, outline your stepwise approach to the treatment of this condition (4 marks)

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Question 3

A 47 year old female presents to your emergency department with 3 days of fever and back pain. She had a history of intravenous drug use. Her vital signs are as follows:

HR 110
BP 110/70
RR 20
SpO2 95% RA
T 38.3C

Other than epidural abscess, list 5 differentials for this presentation. (5 marks)

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Complete the following table regarding expected neurological signs for an epidural abscess with complete cord injury at the level of L5: (5 marks)

Knee extension	
Knee flexion	
Ankle plantarflexion	
Knee jerk	
Ankle jerk	

List 3 likely organisms likely to cause epidural abscess. (3 marks)

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Topic-Based SAQ Quiz: Surgery 2

Other than intravenous drug use, list 3 risk factors for epidural abscess. (3 marks)

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Question 4

A 26 year old female has been brought in by ambulance with severe headache and vomiting. She is 2 weeks post-partum after an uncomplicated pregnancy and delivery.

A non-contrast CT brain is performed, shown in images 1 and 2. Describe 3 major findings on the CT scan. (4 marks)

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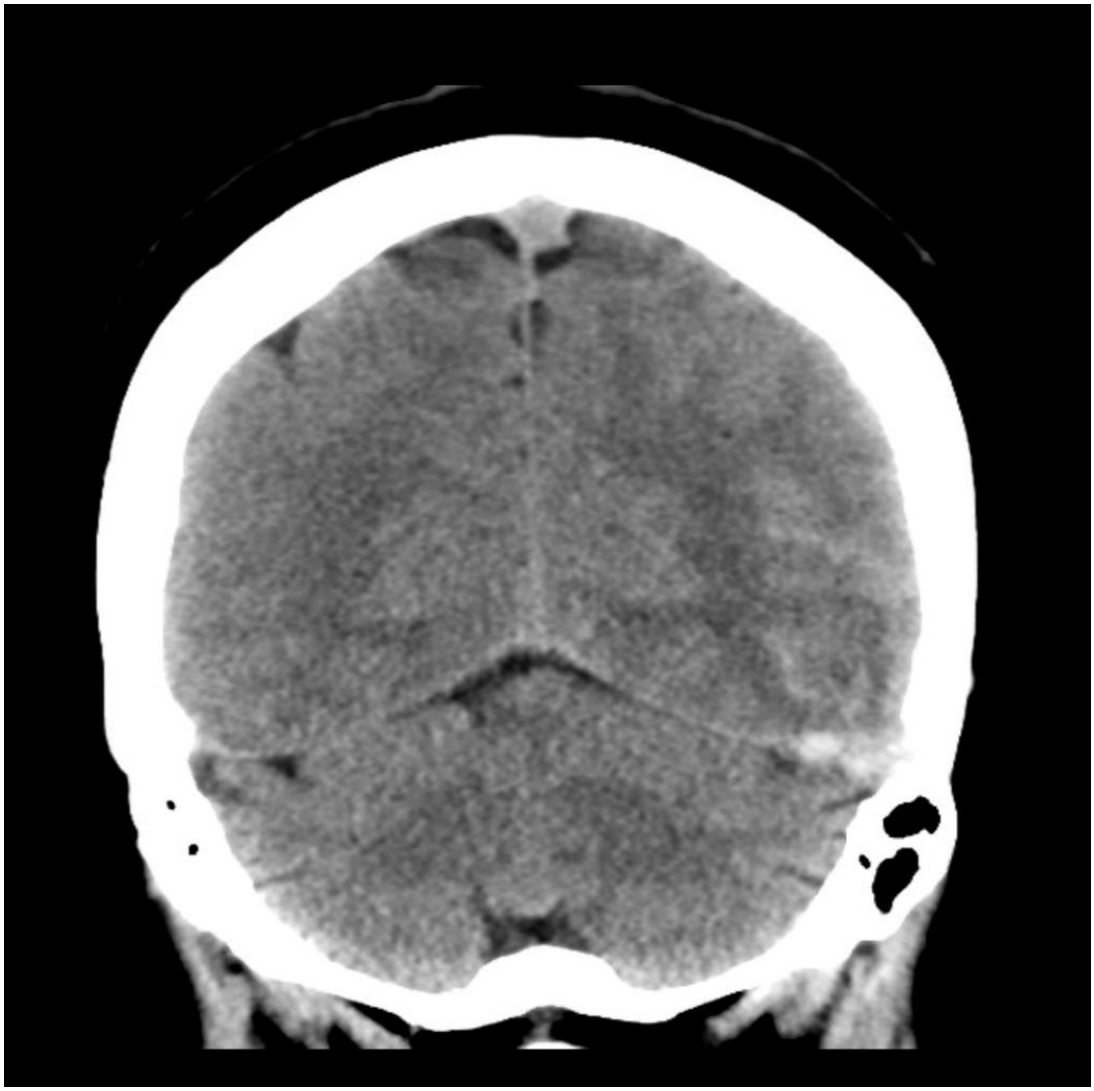

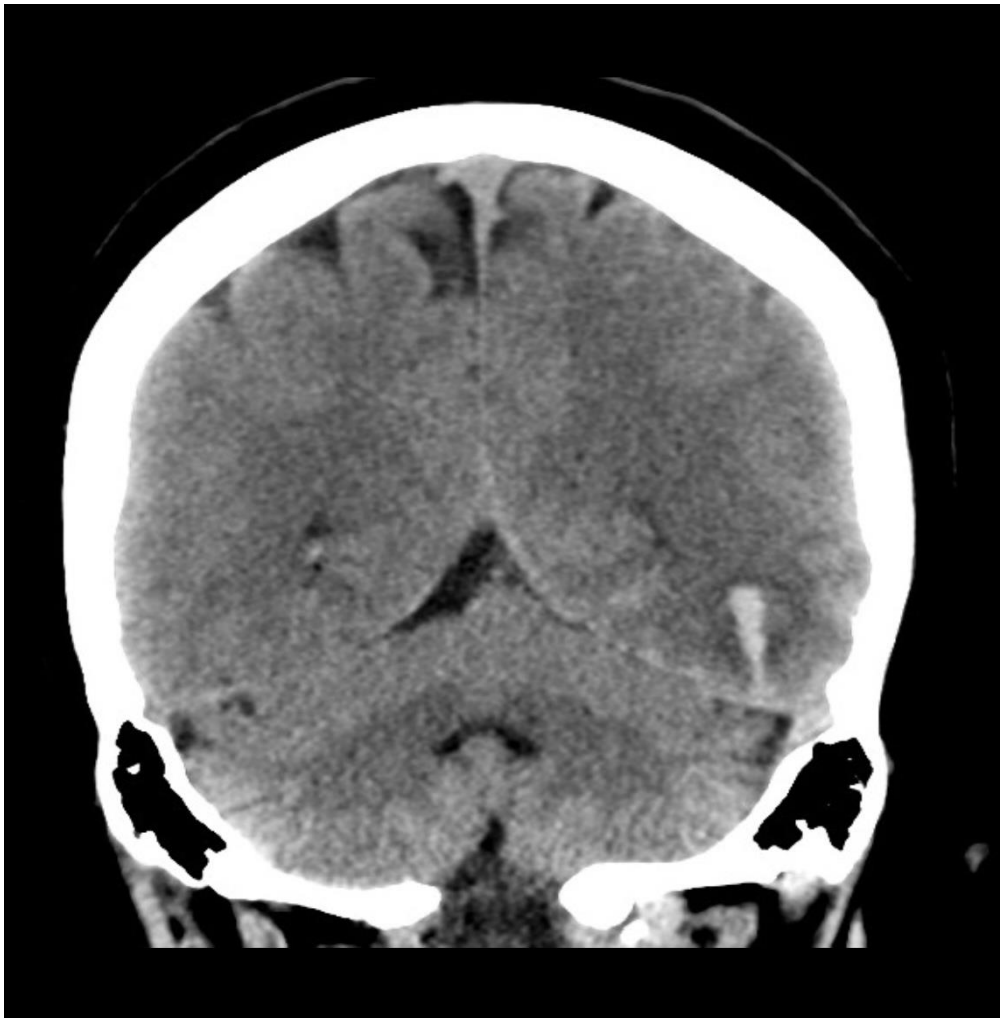

List 4 risk factors for this condition. (4 marks)

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Outline your approach to anticoagulation. (2 marks)

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Two hours later, in the department, she becomes unresponsive with a GCS of 3. A repeat CT is performed, shown in image 3.

Describe the relevant interval changes. (2 marks)

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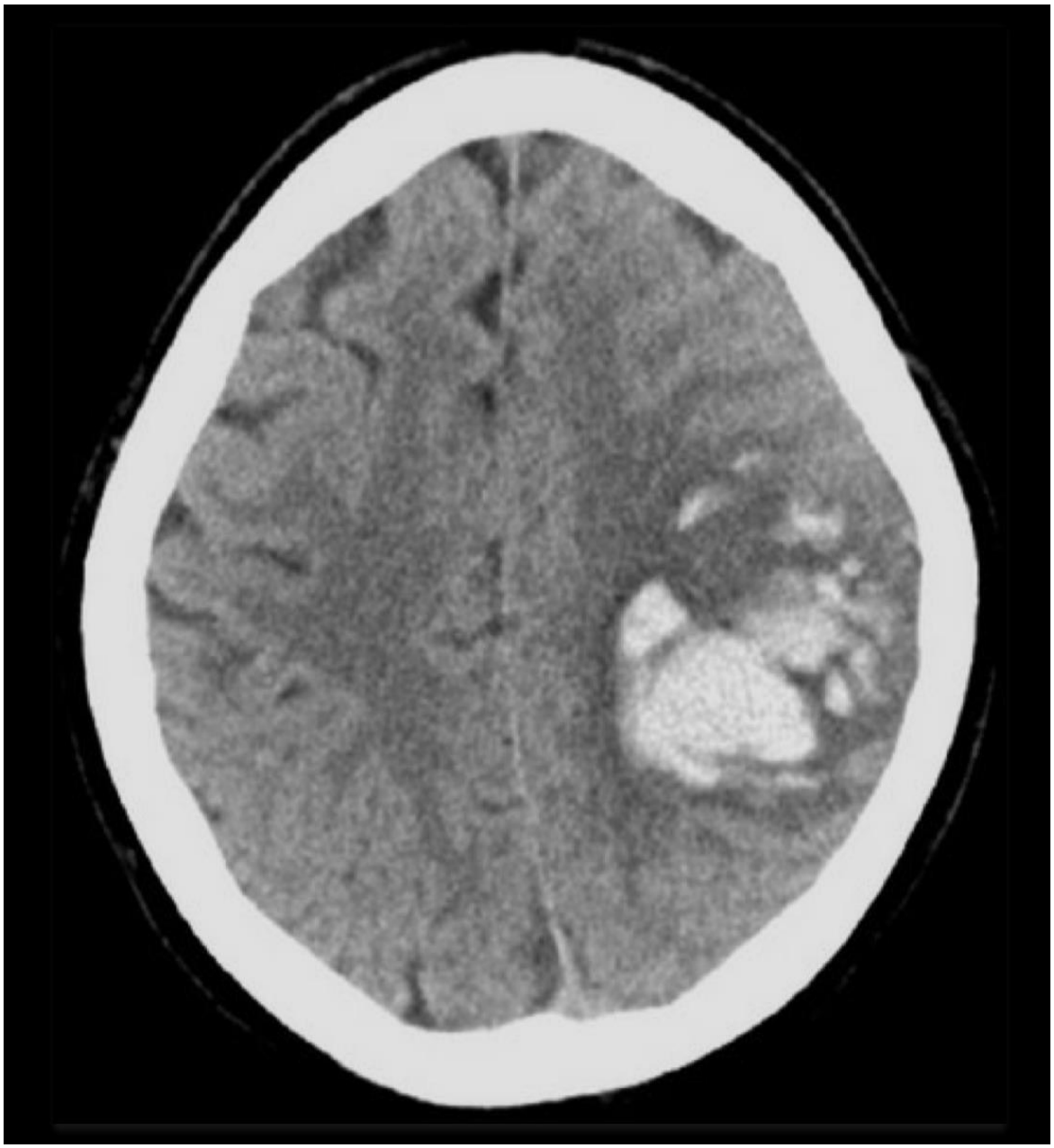

Topic-Based SAQ Quiz: Surgery 2

List two components of your management, other than intubation and ventilation. (2 marks)

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List 3 key components of your approach to her rapid sequence induction and intubation, and give example of how you may achieve them. (3 marks)

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Question 5

A 62 year old man with peripheral vascular disease and atrial fibrillation comes to the emergency department with an extremely painful right leg. The triage nurse gives him a category 2 on the basis of pain score plus concern over distal perfusion.

What are the causes of limb ischaemia? Give examples (2 marks)

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How do features of clinical assessment at the bedside, correlate with the Society for Vascular Surgery (SVS) classification of lower limb ischaemia? (4 marks)

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Name 2 medications, including dose / route / targets that you would prescribe in this case (4 marks)

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Topic-Based SAQ Quiz: Surgery 2

Name 3 interventional procedures that may be used in acute limb ischaemia (3 marks)

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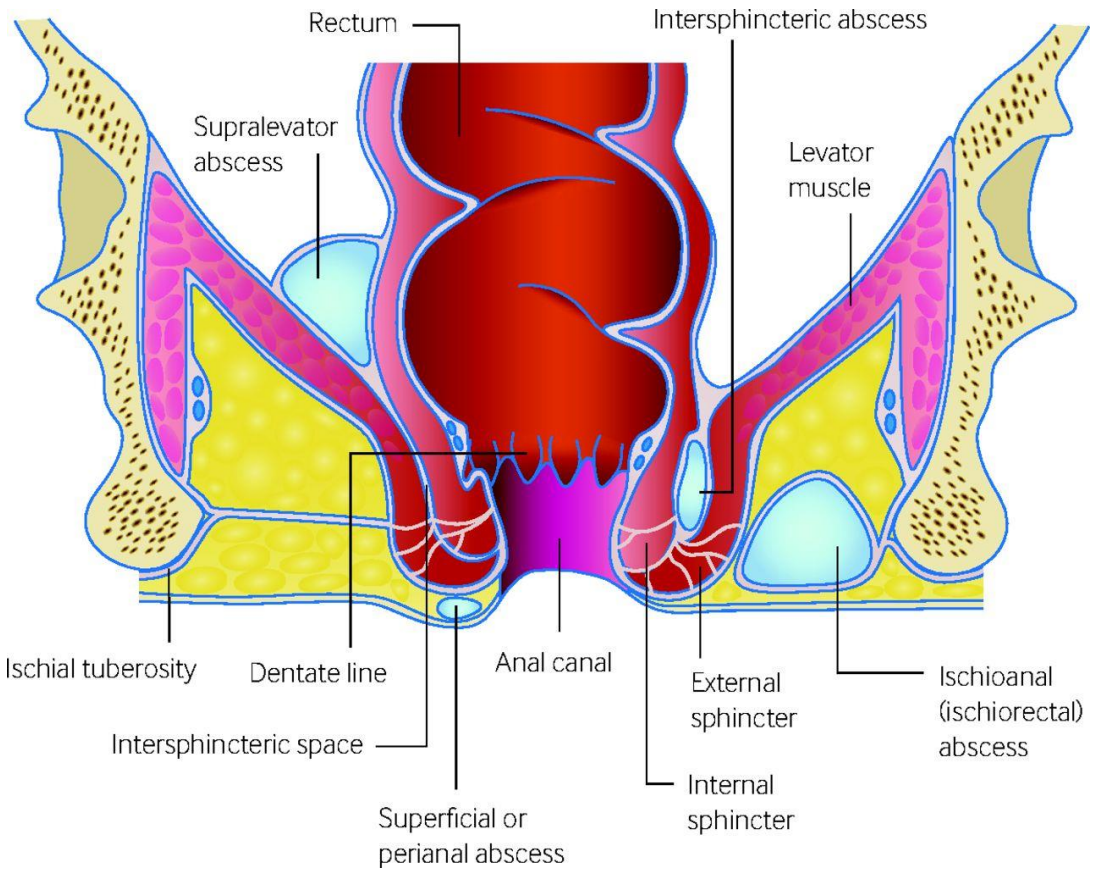
Topic-Based SAQ Quiz: Surgery 2

ANSWERS

Question 1

List the 3 other anatomical types of perianal abscess (3 marks)

- Ischiorectal fossa abscess
- Intersphincteric abscess
- Supralevator abscess



You elect to perform an incision and drainage on his superficial perianal abscess. He is adequately sedated by a senior colleague in your resuscitation room. Outline your approach (4 marks)

- Position in lithotomy (may need an assistant)
- Prep and drape area
- Radial incision into cavity – take swab
- Blunt dissect cavity with forceps / finger
- Irrigate with normal saline
- Insert wick/pack (optional) & Clean / dress

You successfully drain his perianal abscess. List 3 aspects of your post-procedure care of this man (3 marks)

- Analgesia and prevention of constipation
- Regular dressings (remove pack day 1 and don't re-pack), Sitz baths optional
- Close follow up / rate of fistula-in-ano is ~50%
- Return precautions to the ED: fevers, worsening pain, reaccumulation etc

Question 2

Define priapism (1 mark)

Penile erection lasting longer than 4 hours
Or unrelated to stimulation or sexual pleasure

What are the types of priapism? Give causes of each in the below table (4 marks)

Ischaemic (low-flow) – <u>95% of cases</u>	Non-ischaemic (high-flow)
Medications - Vasoactive e.g. papervine - Recreational e.g. cocaine - Alpha blockers Haematological dyscrasias - Sickle cell disease - Leukaemia others Neurogenic - Spinal cord injury / compression - Neurosyphilis Malignancy (e.g. prostate/urethra/bladder) Metabolic disorders (e.g. sarcoidosis) Idiopathic	<u>Main cause</u> = blunt perineal / penile trauma causing high flow fistula between cavernosal artery and lacunar spaces (often occurs 2-3 weeks after injury)

What is the main complication of priapism? In which type does it occur?

- Corporal fibrosis and permanent erectile dysfunction is the main risk of priapism
- Duration is proportional to risk
- Occurs in low-flow priapism

You decide to perform a penile block, outline the technique for this procedure (3 marks)

- Patient lies supine and mark injection entry site at mid-pubic arch at base of penis
- Apply antiseptic to injection site
- Insert needle, aspirate and inject at both sides of symphysis pubis
    - Insert at mid-pubic arch perpendicular to skin until needle strikes symphysis pubis
    - Withdraw a short distance and redirect needle laterally
        - Angle to one side of the symphysis pubis
        - Insert 3-5 mm deep to symphysis pubis
        - Aspirate to confirm not in vessel and inject 5-7 cc of solution
    - Withdraw needle without removing completely from skin

- Repeat injection, redirecting needle to the opposite side of the symphysis pubis

After a successful penile block, outline your stepwise approach to the treatment of this condition (4 marks)

1. Insert 16-18G cannula / aspirate blood until bright red arterial blood is obtained
2. Cavernosal irrigation: Irrigate with 0.9% NaCl
3. Intracavernosal therapy: Inject phenylephrine 200mcg q5-10min until complete detumescence
4. Surgical shunting (requires GA / urologist)

Question 3

Other than epidural abscess, list 5 differentials for this presentation. (5 marks)

- Vertebral osteomyelitis
- Discitis
- Renal abscess
- Retroperitoneal/psoas abscess
- Spinal cord abscess
- Aortic mycotic aneurysm
- Pyelonephritis

Complete the following table regarding expected neurological signs for an epidural abscess with complete cord injury at the level of L5: (5 marks)

Knee extension	Normal
Knee flexion	Weakness
Ankle plantarflexion	Weakness
Knee jerk	Preserved
Ankle jerk	Areflexic

List 3 likely organisms likely to cause epidural abscess. (3 marks)

- S. aureus/MRSA
- Coagulase-negative staphylococci
- S. pyogenes, group B Streptococci

- Gram negative bacilli - Pseudomonas

Other than intravenous drug use, list 3 risk factors for epidural abscess. (3 marks)

- Recent neuraxial instrumentation ie spinal/epidural anaesthesia
- Recent back injury
- Immunosuppression
- Invasive local infection - ie discitis, osteomyelitis, psoas abscess
- Other source of bacteremia ie prosthetic valve, pacemaker, indwelling vascular catheters

Question 4

A non-contrast CT brain is performed, shown in images 1 and 2. Describe 3 major findings on the CT scan. (4 marks)

- Effacement of sulci and left lateral ventricle
- Hyperdense left sigmoid/transverse sinus
- Association left focal intracerebral hemorrhage with surrounding edema

List 4 risk factors for this condition. (4 marks)

- Thrombophilia - pregnancy, congenital, hormone treatment etc
- Local infection ie cerebral abscess, subdural empyema
- Local mass ie benign/malignant tumour
- Skull fracture
- Recent/current instrumentation ie vascular/interventional catheterisation

Outline your approach to anticoagulation. (2 marks)

- 1 mark: Primary process is thrombotic, with secondary hemorrhage ie hemorrhagic venous infarction. This patient requires anticoagulation with short-acting anticoagulation (ie UFH/bivalirudin infusion) despite evidence of hemorrhage.
- 1 mark: Delay anticoagulation if going for procedure ie clot extraction, decompressive craniectomy

Two hours later, in the department, she becomes unresponsive with a GCS of 3. A repeat CT is performed, shown in image 3.

Describe the relevant interval changes. (2 marks)

- Increase in size and edema of intracerebral hemorrhage
- New midline shift to the right

List two components of your management, other than intubation and ventilation. (2 marks)

- Neurosurgical referral for decompressive craniectomy.
- Cease anticoagulation treatment.

List 3 key components of your approach to her rapid sequence induction and intubation, and give example of how you may achieve them. (3 marks)

- Maintain adequate oxygenation - Adequate pre-oxygenation, apneic ventilation, apneic oxygenation, minimise time to intubation.
- Maintain low normal CO2 - Apneic bag-mask ventilation, minimise time to intubation.
- Maintain cerebral perfusion pressure - Aim MAP >80 given assuming high ICP - fluid bolus prior to induction, consider vasoactive infusions or boluses
- Minimise ICP rise (due to hypertensive response) during laryngoscopy and intubation - provide adequate induction drugs including higher dose opiate

Question 5

What are the causes of limb ischaemia? Give examples (2 marks)

Thrombotic – atherosclerotic plaque
Embolic – AF / CCF / AAA
Other – e.g. dissection

How do features of clinical assessment at the bedside, correlate with the Society for Vascular Surgery (SVS) classification of lower limb ischaemia? (4 marks)

Category	Description	Capillary return	Muscle paralysis	Sensory loss	Doppler signals	
					Arterial	Venous
I Viable	Not immediately threatened	Intact	None	None	Audible	Audible
IIa Threatened	Salvageable if promptly treated	Intact/slow	None	Partial	Inaudible	Audible
IIb Threatened	Salvageable if immediately treated	Slow/absent	Partial	Partial/complete	Inaudible	Audible
III Irreversible	Primary amputation	Absent staining	Complete tense compartment	Complete	Inaudible	Inaudible

Name 2 medications, including dose / route / targets that you would prescribe in this case (4 marks)

Fentanyl – IV aliquots titrated to pain
Heparin IV bolus + infusion, titrated to aPTT

Name 3 interventional procedures that may be used in acute limb ischaemia (3 marks)

Catheter-directed thrombolysis
Embolectomy
Bypass